



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/849,523	05/20/2004	Yoshinori Uzuka	1075.1263	5577
21171	7590	11/08/2007	EXAMINER	
STAAS & HALSEY LLP			PATEL, DHIRUBHAI R	
SUITE 700			ART UNIT	PAPER NUMBER
1201 NEW YORK AVENUE, N.W.			2831	
WASHINGTON, DC 20005				
MAIL DATE		DELIVERY MODE		
11/08/2007		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/849,523	UZUKA ET AL.	
	Examiner	Art Unit	
	DHIRU R. PATEL	2831	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 06 September 2007.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) _____ is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All
 - b) Some *
 - c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) Notice of Informal Patent Application
- 6) Other: _____

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the spacer ¹⁶ with no ends recited in claim 1, 3, 13, ¹⁷ and the spacer formed of an endless ^{L65} ¹⁶ loop recited in claim 21 must be shown or the feature(s) canceled from the claim(s). The examiner suggests showing reference number for no ends and an endless loop. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claims 1-21 are objected to because of the following informalities:

In claims 1 and 17, line 4, "no ends" is confusing and unclear in light of the specification because it is not clear that what is no ends. The examiner interpreted as round shaped or ring shaped of a spacer.

108 and 16
In claims 13 line 5, " no ends" is confusing and unclear in light of the specification
because it is not clear that what is no ends. The examiner interpreted as round shaped or ring shaped of a spacer.

In claim 21 line 7, " an endless loop" is confusing and unclear in light of the specification because it is not clear that what is no ends. The examiner interpreted as round shaped or ring shaped of a spacer.

Appropriate correction is required.

Specification

3. The amendment filed 9/6/07 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

In claim 21 line 7, " formed of an endless loop ".

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103 (a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

4. **Claims 1, 10-11, 13,15,17,19 and 21 as best understood, are rejected under 35 U.S.C. § 103 (a) as being unpatentable over Tsuchiyama (7,119,430) in view of Turturro (6,088,915).**

Tsuchiyama discloses:

Regarding claim 1, a spacer 3 for attaching onto a printed wiring board 1 to which is fixed an electronic component 2 having a component package 20, 21, on one of whose surfaces a connection terminal 22 is arranged (see figured 1-2 and column 2 lines 45-67 and column 3 lines 1-25), said spacer comprising a single-piece elastic member (see column 3 lines 20-25), said elastic member being detachably attached to the printed wiring board in such a way as to enclose the electronic component to seal a gap between the electronic component and the printed wiring board (see figs 1-2), and said elastic member being attached to and detached from the printed wiring board by exploiting elastic deformation of said elastic member (see entire column 3), but fails to disclose said spacer with no ends. Turturro teaches the use of a spacer 44 with no ends (see fig 2 and entire column 2), it is well known in the art to use a spacer with no ends as evidence by Turturro, and applicant doesn't state a particular problem is solved by the shape. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the spacer of the assembly of Tsuchiyama with no ends as taught by Turturro for intended purpose, and since more than a mere change of form is necessary for patentability.

In re Span-Deck Inc. V. Fab-con, Inc. (CA 8, 1982) 215 USPQ 835.

Regarding claim 10, the modified assembly of Tsuchiyama disclose all the features of the claimed invention as shown above, including said elastic member, while in contact with the printed wiring board, is attached around the component package by pressure due to the elastic deformation of said elastic member (see figures 1-2 and entire column 3 of Tsuchiyama).

Regarding claim 11, the modified assembly of Tsuchiyama disclose all the features of the claimed invention as shown above, including said elastic member has a cross-sectional shape with a projecting portion thereof, which projects into the gap between the electric component and the printed wiring board when said elastic member is attached to the printed wiring board (see figures 1-2 of Tsuchiyama).

Regarding claim 13, a printed circuit board, comprising:
an electronic component 2 having a component package 20, 21, on one of whose surfaces a connection terminal 22 is arranged (see figures 1-2 and entire columns 2-3); a printed wiring board 1 to which said electronic component is fixed; and a spacer 3 formed as a single-piece elastic member detachably attached to said printed wiring board in such a way as to enclose said electronic component to seal a gap between said electronic component and said printed wiring board, said elastic member being attached to and detached from said printed wiring board by exploiting elastic deformation of the elastic member (see figures 1-2 and entire columns 3-4 and 5-8), but fails to disclose said spacer with no ends.
Turturro teaches the use of a spacer 44 with no ends (see fig 2 and entire column 2), it is well known in the art to use a spacer with no ends as

evidence by Turturro, and applicant doesn't state a particular problem is solved by the shape. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the spacer of the assembly of Tsuchiyama with no ends as taught by Turturro for intended purpose, and since more than a mere change of form is necessary for patentability. *In re Span-Deck Inc. V. Fab-con, Inc.* (CA 8, 1982) 215 USPQ 835..

Regarding claim 15, the modified assembly of Tsuchiyama disclose all the features of the claimed invention as shown above, including in contact with said printed wiring board, is attached around the component package by pressure due to the elastic deformation of the elastic member (see figures 1-2 of Tsuchiyama).

Regarding claim 17, Electronic equipment, comprising a printed circuit board 1 which includes: an electronic component 2 having a component package 20, 21, on one of whose surfaces a connection terminal 22 is arranged; a printed wiring board to which the electronic component is fixed; and a spacer 3 formed as a single-piece elastic member with no ends thereof detachably attached to the printed wiring board in such a way as to enclose the electronic component to seal a gap between the electronic component and the printed wiring board, the elastic member being attached to and detached from the printed wiring board by exploiting elastic deformation of the elastic member (see figures 1-2 and entire columns 2-3 and 5-8), but fails to disclose said spacer with no ends.

Turturro teaches the use of a spacer 44 with no ends (see fig 4 and entire column 2), it is well known in the art to use a spacer with no ends as evidence by Turturro, and applicant doesn't state a particular problem is

solved by the shape. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the spacer of the assembly of Tsuchiyama with an endless loop as taught by Turturro for intended purpose, and since more than a mere change of form is necessary for patentability. *In re Span-Deck Inc. V. Fab-con, Inc. (CA 8, 1982) 215 USPQ 835.*

Regarding claim 19, the modified assembly of Tsuchiyama disclose all the features of the claimed invention as shown above, including the elastic member, while in contact with the printed wiring board, is attached around the component package by pressure due to the elastic deformation of said elastic member (see figures 1-2 of Tsuchiyama).

Regarding claim 21, an apparatus comprising: an electronic component 2; a printed wiring board 1 spaced from the electronic component to form a gap there between (see figure 2 and entire columns 1-3 and 5-8); and a spacer 3 selectively attached to the printed wiring board by an elastic deformation thereof to seal the gap (see fig 2), the spacer comprising a single-piece elastic member (see figure 2 and entire column 3), but fails to disclose said spacer formed of an endless loop. Turturro teaches the use of a spacer 44 with an endless loop (see fig 2 and entire column 2), it is well known in the art to use a spacer formed of an endless loop as evidence by Turturro, and applicant doesn't state a particular problem is solved by the shape. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the spacer of the assembly of Tsuchiyama with an endless loop as taught by Turturro for intended purpose, and since more than a mere change of form is necessary for patentability. *In re Span-Deck Inc. V. Fab-con, Inc. (CA 8, 1982) 215 USPQ*

835.

Allowable Subject Matter

5. **Claims 2, 4, 6, 8 12, 14, 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and search in EAST, EPO, JPO, DERWENT AND PGPUB.**

6. **Claims 3, 5,7, 9,16, and 20 are allowed.**

The following is a statement of reasons for the indication of allowable subject matter:

The primary reasons for the indication of the allowability of claims 3, 5,7, 9,16 and 20 are the inclusion therein, in combination as currently claimed, of the limitation of wherein said elastic member has a frame-like shape with an inner outline which is similar in shape and length to an outline of the component package and is thinner than the gap between the electronic component and the printed wiring board, and wherein the frame-like shape has a pair of hook portions for projecting into the gap between the electronic component and the printed wiring board, the hook portions being provided on the inner outline of the frame-like shape to oppose to each other (for claims 3, 5,7, and 9), and wherein the elastic member has a frame-like shape with an inner outline which is similar in shape to an outline of the component package, and the elastic member, while in contact with said printed wiring board, is attached around the component package

by pressure due to the elastic deformation of the elastic member, and wherein the frame-like shape has a catch protrusion on its inner outline, which catch protrusion protrudes into the gap between the electronic component and said printed wiring board (for claim 16) and wherein the elastic member has a frame-like shape with an inner outline which is similar in shape to an outline of the component package, and the elastic member, while in contact with the printed wiring board, is attached around the component package by pressure due to the elastic deformation of the elastic member, and wherein the frame-like shape has a catch protrusion on its inner outline, which catch protrusion protrudes into the gap between the electronic component and the printed wiring board (for claim 20).

The previously listed limitation is neither disclosed nor taught by the prior art of record, alone or in combination.

Response to Arguments

7. Applicant's arguments with respect to claims 1-21 have been considered but are moot in view of the new ground(s) of rejection.

Contact information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DHIRU R. PATEL whose telephone number is 571-272-1983. The examiner can normally be reached on M-TH, 6:30 TO 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on 571-272-2245. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Dhiru R Patel
DHIRU R PATEL
Primary Examiner
Art Unit 2831
11/4/07
